

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors: Hiroaki SUDO

Art Unit 2416

Appln. No.: 10/534,987

Exr. J. Loo

Filed: November 18, 2002

Conf. No. 1913

For: TRANSMITTING APPARATUS AND TRANSMITTING METHOD

RESPONSE UNDER 37 CFR 1.111

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated February 18, 2009, the Applicant respectfully requests reconsideration and allowance of this application in light of the following remarks.

The Applicant acknowledges with appreciation the indication in the Office Action that claim 29 is allowable.

Claims 18, 20, 21, and 31-33 stand rejected, under 35 USC § 103(a), as being unpatentable over Mody et al. (US 2002/0181509) in view of Kim et al. (US 2002/0199147). Claims 22-27 and 30 stand rejected, under 35 USC § 103(a), as being unpatentable over Mody in view of Kim and Sudo et al. (EP 1 014 639). Claim 28 stands rejected, under 35 USC § 103(a), as being unpatentable over Mody in view of Kim and Gerlach et al. (US 6,628,723). The Applicant respectfully traverses these rejections as follows.

Claim 18 defines a transmitting apparatus that lengthens a guard interval inserted in systematic bit data or parity bit data in accordance with an increase in the number of

retransmissions of the systematic bit data and the parity bit data. The claimed subject matter provides an advantage of incrementally increasing the transmission delay of encoded information so as to avoid an excessive transmission delay (see specification page 4, lines 6-10). (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

The Office Action proposes that Mody discloses setting the lengths of guard intervals within systematic bit data and parity bit data (see Office Action page 2, last paragraph). Although the Office Action acknowledges that Mody does not disclose the Applicant's claimed subject matter of lengthening a guard interval in accordance with an increase in the number of retransmissions of the systematic bit data and the parity bit data (see page 3, second paragraph), the Office Action proposes that Kim discloses deciding [bit mapping] reliabilities in accordance with an increase in the number of such retransmissions (see paragraph bridging pages 3 and 4).

Specifically, Kim discloses for 16 QAM modulation having a symbol reliability pattern of [H,H,L,L], where H designates a high-reliability bit position within the symbol and L designates a low-reliability bit position, that the number of retransmissions of encoded data determines whether: (1) the systematic bits of the encoded data are mapped to low- or high-reliability bit positions of the symbol pattern and (2) the parity bits are mapped to high- or low-reliability bit positions.

However, Kim's disclosure of mapping systematic/parity bits to particular positions of a symbol reliability pattern is not the same as, or even similar to, the Applicant's claimed subject matter of lengthening a guard interval inserted in systematic/parity bit data. Thus, even if Kim's disclosure were incorporated into Mody's structure, this still would not achieve the subject matter of the present claimed invention. Moreover, the Office Action provides no indication as

to how Kim's teaching of mapping bits to particular positions of a symbol reliability pattern in accordance with an increase in retransmissions could be incorporated within Mody's structure so as to increase the length of a guard interval in accordance with an increase in retransmissions. Given that the office action fails to address how such modification of Mody in view of Kim could be made, the office action fails to adequately support an obviousness rejection based on these two references.

The Office Action proposes that a skilled artisan would find motivation to modify Mody's structure in accordance with Kim's teachings so as to maximize coding gain. Although Kim's teaching of remapping systematic/parity bits to low-/high-reliability positions of a symbol reliability pattern may achieve coding gain, the Applicant's claimed subject matter of lengthening a guard interval does not achieve coding gain. Thus, the Office Action's proposed motivation for modifying Mody's structure is unwarranted. As for increasing transmission efficiency, the Office Action provides no indication as to how Kim's remapping of coded data bits within a symbol pattern could be applied to lengthening a guard interval so as to achieve greater transmission efficiency (see Office Action page 4, second paragraph). As a result, both motivations cited in Office Action for modifying Mody's structure in light of Kim's teachings are clearly unfounded.

In summary, Mody and Kim, even considered in combination, fail to disclose the Applicant's claimed subject matter of lengthening a guard interval inserted in systematic bit data or parity bit data in accordance with an increase in the number of retransmissions of the systematic bit data and the parity bit data. Moreover, the office action establishes no motivation to modify Mody's structure based on the teachings of Kim. Additionally, the Office Action fails

to identify how Mody's structure could be modified by Kim's teachings to achieve the claimed subject matter.

Accordingly, the Applicant submits that the teachings of Mody and Kim, considered individually or in combination, do not render obvious the subject matter defined by claim 18. Independent claim 33 similarly recites the above-mentioned subject matter distinguishing apparatus claim 18 from the applied references, but with respect to a method. Therefore, the rejections applied to claims 22-28 and 30 are obviated and allowance of claims 18 and 33 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

/James Edward Ledbetter/

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JEL/DWW/att

James E. Ledbetter  
Registration No. 28,732

Attorney Docket No. 009289-05135  
Dickinson Wright PLLC  
1875 Eye Street, NW, Suite 1200  
Washington, DC 20006  
Telephone: (202) 659-6966  
Facsimile: (202) 659-1559